

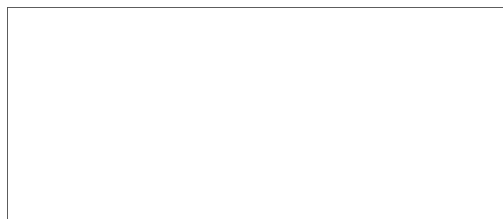
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RS-6 BREAK-IN SENSITIVITY TESTS  
(BEFORE AND AFTER REMOVAL OF C-115)

SERIAL #3121

50X1



13 June 1953

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NO CHANGE IN CLASS. ☐  
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CLASS. CHANGED TO: TS S C 2012  
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I These tests were conducted to evaluate the loss of sensitivity of the RS-6 receiver when the RS-6 is connected for break-in operation. The loss is caused by reactive shunting of the antenna circuit. It was found that removal of C-115 effected a satisfactory cure for the loss of sensitivity but would permit a small RF current to flow in the primary of the receiver antenna coil. It was necessary to determine the magnitude of this current to prevent burnout.

II 10 db S/N Sensitivity

Antenna Z (ohms)	Sensitivity Microvolts			
	Direct		Break-In	
	Before Mod.	After Mod.	Before Mod.	After Mod.
3300	4.5	5.3	16.0	7.0
1200	2.5	2.3	7.8	3.1
300	0.9	0.9	2.0	1.05

Test Conditions:

- (1) Operation ..... CW
- (2) BFO ..... 400 cycles/sec (Max)
- (3) Freq ..... 12.0 Mc/s
- (4) Gain ..... Max
- (5) Note: Raw noise was less than 0.02 mw.

III Raw Sensitivity (Input for 5.0 mw Audio Power)

Antenna Z (ohms)	AM Test			
	Sensitivity Microvolts			
	Direct		Break-In	
	Before Mod.	After Mod.	Before Mod.	After Mod.
3300	60	53	210	76
1200	25	25	80	33
300	11	10.5	21	12
73	14	7.5	14	7.5

Test Conditions:

- (1) Modulation ..... 30% @ 400 cycles/sec
- (2) BFO ..... Off
- (3) Gain ..... Max
- (4) Freq ..... 12 Mc/s

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CW Test				
Antenna Z (ohms)	Sensitivity Microvolts			
	Direct		Break-In	
	Before Mod.	After Mod.	Before Mod.	After Mod.
3300	17	17	58	24
1200	7.3	7.7	24	10
300	4	3.6	7.5	4.1
73	2.9	2.7	3.2	2.7

## Test Conditions:

- (1) BFO .... 400 cycles/sec (Max)
- (2) Freq .... 12 Mc/s
- (3) Gain .... Max

## IV Output Measurements with Fixed Input

Antenna Z (ohms)	Output Power Milliwatts				Loss	
	Direct		Break-In		(db)	
	Before Mod.	After Mod.	Before Mod.	After Mod.	Before Mod.	After Mod.
3300	0.04	0.04	0.0012	0.01	15.23	4.0
1200	1.0	1.0	0.0144	1.36	18.42	4.4
300	16.0	16	2.07	.13	8.88	0.9
73	39.0	39	25.00	39	1.93	0

## Test Conditions:

- (1) AM .... BFO off
- (2) Freq .... 12 Mc/s
- (3) Test Signal .... 15 Microvolts modulated 30% @ 400 cycles/sec
- (4) Gain .... Max
- (5) Power Calculation ....  $\frac{E^2}{R}$ , R = 400ohms

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